



Attorney Docket No. 2002P00939WOUS

UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Bernd Heisele et al  
Application Number: 10/525,713  
Filing Date: 08/29/2005  
Group Art Unit: 1725  
Examiner: Maria Alexandra Elve  
Title: METHOD AND DEVICE FOR PRODUCING NOZZLE-  
TYPE OPENINGS IN SPRAY ARMS FOR  
DISHWASHER MACHINES

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**APPEAL BRIEF**

Pursuant to 37 CFR 1.192, Appellants hereby file an appeal brief in the above-identified application. This Appeal Brief is accompanied by the requisite fee set forth in 37 CFR 1.17(f).

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(1) REAL PARTY IN INTEREST

The real party in interest is BSH Bosch und Siemens Hausgeraete GmbH.

(2) RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) STATUS OF CLAIMS

Claims 1 – 3 are canceled. Claims 4 - 7 are pending in the application and have been finally rejected. The final rejection of claims 4 - 7 is being appealed.

(4) STATUS OF AMENDMENTS

In response to the Final Rejection dated November 27, 2007, a Notice of Appeal was filed and received in the US Patent Office on January 22, 2008. No further response or amendments have been filed subsequent to the Final Rejection.

(5) SUMMARY OF CLAIMED SUBJECT MATTER

**CLAIM 4**

Independent claim 4 of the present application recites a method for producing nozzle-type openings in spray arms for dishwasher machines [Para. 0007]. The method includes the step of removing, via laser, material on the surface of a spray arm blank after the spray arm blank has been produced so as to form nozzle-type openings in the spray arm blank [Para. 0009].

**CLAIM 5**

Claim 5 of the present application depends from claim 4. The method recited in claim 5 of the present application includes, in addition to the all of the features of the method recited in claim 4 of the present application, the additional feature that the step of removing, via laser, material on the surface of a spray arm blank includes removing material so as to form nozzle-type openings having shapes deviating from a circular shape [Para. 0011].

**CLAIM 6**

Independent claim 6 of the present application recites a device for producing nozzle-type openings in spray arms for dishwasher machines [Para. 0007]. The device for producing nozzle-type openings in spray arms for dishwasher machines includes a device for releasably securing the spray arm blank in a fixed position [Para. 0013]. The device for producing nozzle-type openings in spray arms for dishwasher machines also includes a laser disposed relative to the arranged on the device for releasably securing the spray arm blank

in a fixed position, the laser being operable to remove material on the surface of a spray arm blank secured in the fixed position so as to form nozzle-type openings in the spray arm blank [Para. 0013].

#### **CLAIM 7**

Independent claim 7 of the present application recites a method for producing nozzle-type openings in spray arms for dishwashing machines. The method includes the step of blow-molding a plastic spray arm blank [Para. 0009]. The method also includes the step of cutting a nozzle into the surface of the spray arm blank by a laser, wherein the nozzle is sharp-edged to create a constriction of a stream passing through the opening [Para. 0010].

Conventional methods have relied upon cutting and/or milling operations to form the nozzles. These processes are cost-intensive and require subsequent processing in which the spray arm blanks must be clamped. These clamping devices undergo wear and require maintenance. Further, it is very difficult to produce variations of openings using the conventional methods. The conventional methods are not flexible. For example, production of a new variation of a nozzle is time and cost-intensive to adapt, rework, and test the devices that form the nozzle. In contrast to the conventional methods, an exemplary embodiment of the present invention provides a sharp-edged nozzle into the surface of the spray arm blank using a laser. In this manner, the claimed invention is capable of flexibly and inexpensively providing nozzles to spray arms.

#### **THE REFERENCES**

EP Patent No. 0 376 682 to Ohe et al (Ohe et al '682) discloses a tube retainer 2 that has at least two ring members 2a and a base 2b connecting these ring members 2a. A laser beam-irradiating portion 3 is provided on the distal end of an optical fiber 6 for focusing a beam and the holes can be formed in a tube using laser irradiation.

US Patent No. 4,420,005 to Armstrong (Armstrong '005) discloses a dishwasher 10 that comprises three sub-assemblies: a bottomless four-sided base 12 made of a plastic material such as styrene; a vinyl covered wire dishrack 13 onto which is mounted a rotatable spray arm 14 (Col. 2, lines 12- 16 and FIGS. 2 and 3). Two series of holes are drilled in the two pieces of plastic tubing of arm 14 (Col. 2, lines 43 – 44 and FIGS. 2 and 3).

US Patent No. 6,034,349 to Ota (Ota '349) discloses excimer pulse laser light emitted from a laser head 1 of an excimer laser oscillator irradiated to a work 10 positioned on a machining stage 11 through a shutter 2 to thereby form a hole in the work 10.

(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- a. Whether claims 4 and 7 are unpatentable under 35 U.S.C. § 103(a) over US Patent No. 4,420,005 to Armstrong in view of EP Patent No. 0 376 682 to Ohe et al?
- b. Whether claim 5 is unpatentable under 35 U.S.C. § 103(a) over US Patent No. 4,420,005 to Armstrong and EP Patent No. 0 376 682 to

Ohe et al and further in view of US Patent No. 6,034,349 to Ota?

- c. Whether claim 6 is unpatentable under 35 U.S.C. § 103(a) over EP Patent No. 0 376 682 to Ohe et al?

(7) ARGUMENT

- a. Whether claims 4 and 7 are unpatentable under 35 U.S.C. § 103(a) over US Patent No. 4,420,005 to Armstrong in view of EP Patent No. 0 376 682 to Ohe et al?

The Examiner asserts that Armstrong '005 discloses a dishwasher having rotatable spray arms and that holes are present in the spray arms (14). However, the Examiner concedes that Armstrong '005 does not teach the type of drilling used to form the holes in the spray arms. Nonetheless, the Examiner asserts that it would have been obvious to one of ordinary skill in the art to use a laser to form holes, as taught by Ohe et al '682, in the Armstrong '005 system.

Appellants submit that neither Armstrong '005 nor Ohe et al '682, either alone or in combination, teaches or suggests the features of the claimed invention recited in claim 4 of the present invention including a method for producing nozzle-type openings in spray arms for dishwasher machines that includes removing, via laser, material on the surface of a spray arm blank after the spray arm blank has been produced so as to form nozzle-type openings in the spray arm blank. Additionally, Appellants submit that neither Armstrong '005 nor Ohe et al '682, either alone or in combination, teaches or suggests the features of the claimed

invention recited in claim 7 of the present invention the method of the claimed invention including blow-molding a plastic spray arm blank, and cutting a nozzle into the surface of the spray arm blank by a laser. The cutting creating a nozzle that is sharp-edged to create a constriction of a stream passing through the opening.

Accordingly, the outstanding rejection of claims 4 and 7 under 35 U.S.C. § 103(a) is in error and should be reversed.

- b. Whether claim 5 is unpatentable under 35 U.S.C. § 103(a) over US Patent No. 4,420,005 to Armstrong and EP Patent No. 0 376 682 to Ohe et al and further in view of US Patent No. 6,034,349 to Ota?

The Examiner concedes that neither Armstrong '005 nor Ohe et al '682 disclose the shaping of holes. However, the Examiner asserts that Ota '349 discloses laser machining forming holes with desired shapes and sizes. The Examiner asserts that it would have been obvious to one of ordinary skill in the art to form different shapes as taught by Ota '349 in the Armstrong '005 system because tailored holes can direct water such that cleaning action of the dishwasher is optimized.

Appellants submit that none of Armstrong '005, Ohe et al '682, or Ota '349, either alone or in combination, teaches or suggests the features of the claimed invention recited in claim 5 of the present invention including the steps of the method recited in claim 4 of the present application wherein the step of removing, via laser, material on the surface of a spray arm blank includes removing material so as to form nozzle-type openings having shapes deviating from a circular shape.



Accordingly, the outstanding rejection of claim 5 under 35 U.S.C. § 103(a) is in error and should be reversed.

- c. Whether claim 6 is unpatentable under 35 U.S.C. § 103(a) over EP Patent No. 0 376 682 to Ohe et al?

The Examiner asserts that Ohe et al '682 discloses a tube retainer 2 and a laser beam-irradiating portion 3 is provided on the distal end of an optical fiber 6 for focusing a beam and the holes can be formed in a tube using laser irradiation. The Examiner further asserts that it would have been obvious to one of ordinary skill in the art to use the tubing in a dishwasher or any device requiring a drilled tube as taught by Ohe et al '682 because it is merely an application of the device.

Appellants submit that Ohe et al '682 does not teach nor suggest a device as recited in claim 6 of the present application for producing nozzle-type openings in spray arms for dishwasher machines that includes a device for releasably securing the spray arm blank in a fixed position, and a laser disposed relative to the arranged on the device for releasably securing the spray arm blank in a fixed position, with the laser being operable to remove material on the surface of a spray arm blank secured in the fixed position so as to form nozzle-type openings in the spray arm blank.

Accordingly, the outstanding rejection of claim 6 under 35 U.S.C. § 103(a) is in error and should be reversed.

(8) CONCLUSION

In view of the foregoing discussion, it is respectfully requested that the Honorable Board of Patent Appeals and Interferences overrule the final rejection of claims 4 - 7 over the cited art, and hold that the Appellants' claims be allowable over such art.

Respectfully submitted,



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CLAIMS APPENDIX

1- 3 (canceled)

4. A method for producing nozzle-type openings in spray arms for dishwasher machines, comprising:  
removing, via laser, material on the surface of a spray arm blank after the spray arm blank has been produced so as to form nozzle-type openings in the spray arm blank.
5. The method for producing nozzle-type openings according to claim 4, wherein the step of removing, via laser, material on the surface of a spray arm blank includes removing material so as to form nozzle-type openings having shapes deviating from a circular shape.
6. A device for producing nozzle-type openings in spray arms for dishwasher machines, comprising:  
a device for releasably securing the spray arm blank in a fixed position; and  
a laser disposed relative to the arranged on the device for releasably securing the spray arm blank in a fixed position, the laser being operable to remove material on the surface of a spray arm blank secured in the fixed position so as to form nozzle-type openings in the spray arm blank.
7. A method for producing nozzle-type openings in spray arms for dishwashing machines, comprising:  
blow-molding a plastic spray arm blank; and

cutting a nozzle into the surface of the spray arm blank by a laser, wherein the nozzle is sharp-edged to create a constriction of a stream passing through the opening.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None